**Irina Gaynanova**
Associate Professor, Department of Statistics, Texas A&M University
irinag@stat.tamu.edu
irinagain.github.io
May 13, 2023

## Research interests

Statistical learning, high-dimensional data, multivariate analysis, classification, data integration, computational statistics, machine learning.

## Education

- Ph.D, Statistics **05/2015**
  Cornell University, Ithaca, NY
  Advisors: James Booth and Martin Wells
- M.S., Statistics **05/2013**
  Cornell University, Ithaca, NY
- Diploma with honors (M.S.), Applied Mathematics and Computer Science **06/2009**
  Lomonosov Moscow State University, Moscow, Russia

## Professional Positions

- *Associate Professor (with tenure)* **since 09/2021**
  Department of Statistics, Texas A&M University
- *Assistant Professor* **07/2015 - 08/2021**
  Department of Statistics, Texas A&M University
- *Senior Specialist* **06/2009 - 07/2010**
  Balancing Market Division, OJSC Trading System Administrator, Moscow, Russia
- *Junior Statistician* **06/2008 - 05/2009**
  Census Division, AC Nielsen, Moscow, Russia

## Awards and Honors

- NSF CAREER Award **2021**
- Dr. Judith Edmiston Mentoring Award, College of Science, Texas A&M University **2021**
- DeBakey Executive Research Leadership Certification, Texas A&M University **2021**
- David P. Byar Young Investigator Award, ASA Biometrics Section **2018**
- Cornelia Ye Outstanding Teaching Assistant Award, Cornell University **2014**
- EducationUSA Opportunity Award **2009**
- Study Abroad Scholarship, Technical University of Munich, Germany **2007**

## Competitive Travel Awards

- IMS New Researchers Conference **2017**
- NISS Writing Workshop for Junior Researchers **2016**
- SAMSI LDHD Summer School Program **2013**
- Building Future Faculty Program, NC State University **2013**
- Diversity and Mentoring Program at JSM **2012**

## Publications and Submitted Manuscripts

**Note on authorship:** the sign * at the beginning of a paper indicates alphabetical order of authorships; the sign + indicates co-first authorships; underline denotes mentored student or post-doctoral associate; the sign ✉ denotes the corresponding author.

*Submitted Manuscripts:*

34. Chung H.C., Ni Y. and **Gaynanova I.**✉(2023+) "Sparse semiparametric discriminant analysis for high-dimensional zero-inflated data." Preprint available on arXiv:2208.03734.
33. Yuan D., Zhang Y., Guo S., Wang W. and **Gaynanova I.**✉(2023+) "Exponential canonical correlation analysis with orthogonal variation." Preprint available on arXiv:2208.00048.
32. Yi S., Wong R. and **Gaynanova I.**✉(2023+) "Hierarchical nuclear norm penalization for multi-view data integration." Preprint available on arXiv:2206.12891.

*Peer-reviewed Publications:*

31. Sergazinov R., Leroux A., Cui E., Crainiceanu C., Aurora R., Punjabi N. and **Gaynanova I.**✉ (2023+) "A case study of glucose levels during sleep using fast function on scalar regression inference." *Biometrics,* accepted.
30. Sergazinov R.✉, Armandpour R. and **Gaynanova I.** (2023) "Gluformer: Transformer-based personalized glucose forecasting with uncertainty quantification." *2023 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*.
Link: https://doi.org/10.1109/ICASSP49357.2023.10096419
29. Zhang Y. and **Gaynanova I.**✉(2022) "Joint association and classification analysis of multi-view data." *Biometrics,* Vol. 78, No. 4, 1614-1625.
Link: https://doi.org/10.1111/biom.13536
28. Yuan D. and **Gaynanova I.**✉(2022) "Double-matched matrix decomposition for multi-view data." *Journal of Computational and Graphical Statistics,* Vol. 31, No. 4, 1114-1126.
Link:https://doi.org/10.1080/10618600.2022.2067860
27. Chung H.C., **Gaynanova I.** and Ni Y.✉(2022) "Phylogenetically informed Bayesian truncated copula graphical models for microbial association networks." *Annals of Applied Statistics* , Vol. 16, No. 4, 2437-2457.
Link: https://doi.org/10.1214/21-AOAS1598
26. Schwenck J.✉, Punjabi N. and **Gaynanova I.** (2022) "bp: Blood Pressure analysis in R." *PLoS One,* Vol. 17, No. 9, e0268934.
Link: https://doi.org/10.1371/journal.pone.0268934

25. Aurora R. N.✉, **Gaynanova I.**, Patel P., and Punjabi N. M. (2022).“Glucose profiles in obstructive sleep apnea and type 2 diabetes mellitus." *Sleep Medicine,* Vol. 95, 105-111
Link: https://doi.org/10.1016/j.sleep.2022.04.007

24. Fernandes N., Nhan, N., Chun, E., Punjabi N. and **Gaynanova I.**✉(2022) “Open-source algorithm to calculate mean amplitude of glycemic excursions using short and long moving averages." *Journal of Diabetes Science and Technology,* Vol. 16, No. 2, 576-577.
Link: https://doi.org/10.1177/19322968211061165

23. **Gaynanova I.**✉, Punjabi N. and Crainiceanu C. (2022) “Modeling continuous glucose monitoring (CGM) data during sleep." *Biostatistics,* Vol. 23, No. 1, 223-239.
Link: https://doi.org/10.1093/biostatistics/kxaa023

22. Lapanowski A. and **Gaynanova I.**✉(2021) “Compressing large-sample data for discriminant analysis." *2021 IEEE International Conference on Big Data (Big Data),* 1068-1076.
Link: https://doi.org/10.1109/BigData52589.2021.9671676

21. Huang M., Müller C. and **Gaynanova I.** (2021) “latentcor: An R package for estimating latent correlations from mixed data types." *Journal of Open Source Software,* Vol. 6, No. 65, 3634.
Link: https://doi.org/10.21105/joss.03634

20. Risk B.+✉ and **Gaynanova I.**+ (2021) “Simultaneous non-Gaussian component analysis (SING) for data integration in neuroimaging." *Annals of Applied Statistics,* Vol. 15, No. 3, 1431-1454.
Link: https://doi.org/10.1214/21-AOAS1466

19. Yoon G., Müller C. and **Gaynanova I.**✉(2021) “Fast computation of latent correlations." *Journal of Computational and Graphical Statistics,* Vol. 30, No. 4, 1249-1256.
Link: https://doi.org/10.1080/10618600.2021.1882468

18. Solhjoo S., Punjabi N., Ivanescu A., Crainiceanu C., **Gaynanova I.**, Wicken C., Buckenmaier C., and Haigney M.✉ (2021) “Methadone destabilizes cardiac repolarization during sleep." *Clinical Pharmacology & Therapeutics,* Vol. 110, No. 4, 1066-1074.
Link: https://doi.org/10.1002/cpt.2368

17. Broll S., Urbanek J., Buchanan D., Chun E., Muschelli J., Punjabi N. and **Gaynanova I.**✉(2021) “Interpreting blood glucose data with R package iglu." *PLoS one,* Vol. 16, No. 4, e0248560.
Link: https://doi.org/10.1371/journal.pone.0248560

16. Taylor N.✉, **Gaynanova I.**, Eschrich S., Welsh E., Garrett T., Beecher C., Sharma R., Koomen J., Smalley K., Messina J., Kanetsky P. (2020) “Metabolomics of primary cutaneous melanoma and matched adjacent extratumoral microenvironment." *PLoS one,* 15(10):e0240849.
Link: https://doi.org/10.1371/journal.pone.0240849

15. Yoon G., Carroll R. and **Gaynanova I.**✉ (2020) “Sparse semiparametric canonical correlation analysis for data of mixed types." *Biometrika,* Vol. 107, No. 3, 609-625
Link: https://doi.org/10.1093/biomet/asaa007

14. **Gaynanova I.**✉ (2020) “Prediction and estimation consistency of sparse multi-class penalized optimal scoring." *Bernoulli,* Vol. 26, No. 1, 286-322.
Link: https://projecteuclid.org/euclid.bj/1574758829

13. **Gaynanova I.**✉ and Li G. (2019). “Structural learning and integrative decomposition of multi-view data." *Biometrics,* Vol. 75, No. 4, 1121-1132.
Link: https://doi.org/10.1111/biom.13108

12. * Bien J., **Gaynanova I.**, Müller C. and Lederer J.✉(2019). "Prediction error bounds for linear regression with the TREX." *TEST,* Vol. 28, No. 2, 451-474.
Link: https://doi.org/10.1007/s11749-018-0584-4

11. Yoon G., **Gaynanova I.** and Müller, C.✉(2019) "Microbial networks in SPRING - Semi-parametric rank-based correlation and partial correlation estimation for quantitative microbiome data." *Frontiers in Genetics,* Vol. 10, 516.
Link: https://doi.org/10.3389/fgene.2019.00516

10. Lapanowski A.✉ and **Gaynanova I.** (2019) "Sparse feature selection in kernel discriminant analysis via optimal scoring." *Proceedings of the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)* , PMLR 89, 1704-1713.
Link: http://proceedings.mlr.press/v89/lapanowski19a.html

9. Lederer J.✉, Lu Y. and **Gaynanova I.** (2019). "Oracle inequalities for high-dimensional prediction." *Bernoulli,* Vol. 25, No. 2, 1225-1255.
Link: https://projecteuclid.org/euclid.bj/1551862849

8. **Gaynanova I.**✉ and Wang T. (2019) "Sparse quadratic classification rules via linear dimension reduction." *Journal of Multivariate Analysis,* Vol. 169, 278-299.
Link: https://doi.org/10.1016/j.jmva.2018.09.011

7. **Gaynanova I.**✉, Urbanek J. and Punjabi N. (2018). "Letter to the Editor: Corrections of equations on glycemic variability and quality of glycemic control." *Diabetes Technology & Therapeutics,* Vol. 20, No. 4, 317.
Link: https://doi.org/10.1089/dia.2018.0057

6. Li G.✉and **Gaynanova I.** (2018). "A general framework for association analysis of heterogeneous data." *Annals of Applied Statistics,* Vol. 12, No. 3, 1700-1726.
Link: http://doi.org/10.1214/17-AOAS1127

5. * Bien J., **Gaynanova I.**✉, Müller C. and Lederer J. (2018). "Non-convex global minimization and false discovery rate control for the TREX." *Journal of Computational and Graphical Statistics,* Vol. 27, No. 1, 23-33.
Link: https://doi.org/10.1080/10618600.2017.1341414

4. Hokamp J.✉, Leidy S., **Gaynanova I.**, Cianciolo R. and Nabity M. (2018) "Correlation of electrophoretic urine protein banding patterns with severity of renal damage in dogs with proteinuric chronic kidney disease." *Veterinary Clinical Pathology,* Vol. 47, No. 3, 424-434.
Link: https://doi.org/10.1111/vcp.12648

3. **Gaynanova I.**✉, Booth J. and Wells M. (2017). "Penalized versus constrained generalized eigenvalue problems." *Journal of Computational and Graphical Statistics,* Vol. 26, No. 2, 379-387.
Link: https://doi.org/10.1080/10618600.2016.1172017

2. **Gaynanova I.**✉, Booth J. and Wells M. (2016). "Simultaneous sparse estimation of canonical vectors in the $p \gg n$ setting." *Journal of the American Statistical Association,* Vol. 111, No. 514, 696-706.
Link: http://doi.org/10.1080/01621459.2015.1034318

1. **Gaynanova I.**✉ and Kolar M. (2015). "Optimal variable selection in multi-group sparse discriminant analysis." *Electronic Journal of Statistics,* Vol. 9, No. 2, 2007-2034.Link: http://doi.org/10.1214/15-EJS1064

*Unrefereed Manuscripts:*

3. **Gaynanova I.**✉ (2022)"Digital biomarkers of glucose control - reproducibility challenges and opportunities." *Biopharmaceutical Report,* Vol. 29, No. 1, 21-26.
2. **Gaynanova I.** (2015). "Estimation of sparse low-dimensional linear projections." Ph.D. Thesis, Cornell University.
1. **Gaynanova I.**, Booth J. and Wells M. (2013). "Supervised classification using sparse Fisher's LDA." Technical report, arXiv:1301.4976 [stat.ML].

## Software and Other

Mentored student and post-doctoral associate co-authors are underlined.

14. singR: an R package with the implementation of SING method (SImultaneous Non-Gaussian component analysis) for data integration in neroimaging
Authors: Wang L., **Gaynanova I.**, Risk B.
13. bp: an R package for blood pressure analysis, available from Github
Authors: Schwenck, J., **Gaynanova I.**
12. latentcor: an R package for estimating latent correlations from mixed data types, available from Github
Authors: Huang M., Yoon G., Müller, C, **Gaynanova I.**
11. SLIDE: an R package for learning partially-shared structures from multi-view data, available from Github.
Authors: **Gaynanova I.**, Yuan D.
10. biClassify: an R package for binary classification using extensions of discriminant analysis, CRAN
Authors: Lapanowski A., **Gaynanova I.**
9. Martin M., Buchanan D., Chun E., Bhat R., Cass S., Wang E., Senthil S. and **Gaynanova I.**✉(2021). irinagain/Awesome-CGM: Updated release with simulators and enhanced processing (Version v1.1.0). Zenodo. DOI: 10.5281/zenodo.4723654
8. iglu: an R package for interpreting data from continuous glucose monitors (CGMs), available from Github and CRAN.
Authors (Version 3.0.0): Broll S., Buchanan D., Chun E., Muschelli J., Fernandes N., Urbanek J., Seo J., Shih J., Schwenck J., Hicban M., Martin M., Patel P., Meyyappan A., Nguyen N. and **Gaynanova I.**
7. SPRING: an R package for estimation of sparse microbial association networks using rank-based correlation, available from Github.
Authors: Yoon G., **Gaynanova I.**, Müller, C.
6. sparseKOS: an R package for nonlinear binary classification using sparse kernel optimal scoring, available from Github.
Authors: Lapanowski A., **Gaynanova I.**
5. JACA: an R package for joint association and classification analysis of multi-view data, available from Github.
Authors: Zhang Y., **Gaynanova I.**

4. mixedCCA: an R package for semiparametric sparse canonical correlation analysis for data of mixed types (continuous/ binary/ zero-inflated), available from Github.
   Authors: Yoon G., **Gaynanova I.**
3. DAP: an R package to perform discriminant analysis via projections, available from Github and CRAN.
   Authors: Wang T., **Gaynanova I.**
2. TREX: a Matlab package to perform sparse linear regression using TREX, available from Github.
   Authors: Müller C., Bien J., **Gaynanova I.**, Combettes P.
1. MGSDA: an R package to perform sparse multi-group discriminant analysis, available from CRAN.
   Authors: **Gaynanova I.**

## Funding

*As PI or Co-PI:*

- NSF CAREER Award DMS-2044823 **Gaynanova I. (PI)** **06/2021 - 05/2026**
  Next-generation methods for statistical integration of high-dimensional disparate data sources
  Total awarded amount: $400,000.00

- TAMU Seed Grant Program for Promoting Research Collaborations (College of Liberal Arts, College of Science, and College of Geosciences) **Gaynanova I. (PI)** **06/2022 - 05/2023**
  Modifiable risk factors and interventions in diabetes
  Total awarded amount: $10,000.

- TAMU Presidential Transformation Teaching Grant (PTTG) **Gaynanova I. (PI)** **01/2021 - 12/2022**
  Total awarded amount: $20,000.00

- TAMU College of Science **Gaynanova I. (PI)** **10/2021 - 06/2022**
  Science Undergraduate Research Opportunities Program (SUROP)
  Total awarded amount: $1,820.00 (support for 1 undergraduate student).

- TAMU Institute of Data Science Postdoctoral Project Program **Ni Y. (PI)** **07/2020 - 06/2022**
  Studying microbial interactions and host heterogeneity via data integration
  Role: Co-PI
  Total awarded amount: $59,100.00 (50% of postdoctoral researcher support for 2 years)

- Johns Hopkins University, Subcontract **Gaynanova I. (PI)** **07/2019 - 06/2020**
  Statistical Analysis of CGM Data
  Total awarded amount: $30,063.00

- NSF DMS-1712943 **Gaynanova I. (PI)** **07/2017 - 06/2020**
  Scalable methods for classification of high-dimensional heterogeneous data
  Total awarded amount: $162,539.00

*As Co-I:*

- NSF CCF-1934904 **Mallick B. (PI)** **10/2019 - 09/2022**
  HDR Tripods: Texas A&M Research Institute for Interdisciplinary Foundations of Data Science
  Total awarded amount: $1,416,522.00
  Role: Co-Investigator, 0% effort

- Delta Omega REDI, Texas A&M School of Public Health **Taylor N. (PI)** **06/2017 - 05/2018**
  Integrative gene expression profiling of primary colorectal cancer and adjacent extratumoral environment
  Total awarded amount: $25,000
  Role: Co-Investigator, 0% effort

## Presentations

*Invited Presentations:*

62. Department of Data Science and Operations, University of Southern California Marshall School of Business, March 2023
61. Department of Biostatistics, University of Washington, November 2022
60. Invited session, Joint Statistical Meetings, Washington DC, August 2022
59. TRICAP'22 Tensor and multiblock data analysis, Auberge Des Sequins, Luberon, France, June 2022
58. Department of Mathematics and Statistics, University of Massachusetts Amherst, May 2022
57. ENAR, Houston, TX, March 2022
56. Center for Approximation and Mathematical Data Analytics (CAMDA) seminar, Texas A&M University, March 2022
55. Department of Biostatistics, Virginia Commonwealth University, virtual due to COVID-19, December 2021
54. Missing values and Causal Inference seminar, joint between Ecole Polytechnique and INRIA Saclay, France, virtual due to COVID-19, November 2021
53. TAMIDS workshop on UQ and machine learning, Texas A&M University, November 2021
52. Department of Statistics, Penn State University, September 2021
51. ICSA Applied Statistics Symposium, virtual due to COVID-19, September 2021
50. Department of Statistics, University of Washington, virtual due to COVID-19, May 2021
49. Data & Science podcast with Glen Wright Colopy, April 2021
48. Transformational Teaching and Learning Conference, Texas A&M University, virtual due to COVID-19, April 2021
47. Pod of Asclepius, The Healthcare Technology Podcast sponsored by ASA, December 2020
46. Department of Mathematics, Statistics and Computer Science, the University of Illinois at Chicago, virtual due to COVID-19, October 2020

45. Department of Biostatistics, University of North Carolina, Chapel Hill, virtual due to COVID-19, August 2020
44. Invited session, Joint Statistical Meetings, virtual due to COVID-19, August 2020
43. 4th International Conference on Econometrics and Statistics (EcoSta 2020), Seoul, South Korea, July 2020 **(canceled due to COVID-19)**
42. Department of Biostatistics, University of Washington, May 2020 **(canceled due to COVID-19)**
41. Department of Statistics, University of Washington, May 2020 **(canceled due to COVID-19)**
40. Department of Biostatistics, Emory University, April 2020 **(canceled due to COVID-19)**
39. Banff International Research Station, workshop on the "Use of Wearable and Implantable Devices in Health Research", Banff, Canada, February 2020
38. Department of Statistics, Oregon State University, February 2020
37. The Gatsby Computational Neuroscience Unit, University College London, UK, December 2019
36. The Fourth Workshop on Higher-Order Asymptotics and Post-Selection Inference (WHOA-PSI), St. Louis, MO, August 2019
35. Topic-Contributed session, Joint Statistical Meetings, Denver, CO, July 2019
34. ICSA Applied Statistics Symposium, Raleigh, NC, June 2019
33. Econometrics and Statistics Colloquium, Booth School of Business, University of Chicago, May 2019
32. Department of Biostatistics, University of Michigan, April 2019
31. Big Data Working group, College of Veterinary Medicine, Texas A&M University, March 2019
30. Friday Science Seminar, College of Science, Texas A&M University, February 2019
29. Department of Biostatistics, University of Minnesota, February 2019
28. 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CM Statistics 2018), Pisa, Italy, December 2018
27. Bioinformatics and Cancer Symposium, Texas A&M University, September 2018
26. Topic-Contributed session, Joint Statistical Meetings, Vancouver, Canada, August 2018
25. IMS Asia Pacific Rim Meeting 2018, Singapore, June 2018
24. ICSA Applied Statistics Symposium, New Brunswick, NJ, June 2018
23. Statistical Learning and Data Science Conference, New York, NY, June 2018
22. Department of Statistics, Indiana University, April 2018
21. SAMSI Operator Splitting Workshop, Research Triangle Park, NC, March 2018
20. Department of Biostatistics, UT MD Anderson Cancer Center, March 2018
19. 10th International Conference of the ERCIM WG on Computational and Methodological Statistics (CM Statistics 2017), London, UK, December 2017
18. Department of Statistical Science, Baylor University, November 2017
17. Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, September 2017
16. Data-Driven Model Reduction Workshop, Texas A&M University, April 2017

15. Conference of Texas Statisticians (COTS), Dallas, TX, March 2017
14. ENAR, Washington DC, March 2017
13. 9th International Conference of the ERCIM WG on Computational and Methodological Statistics (CM Statistics 2016), Seville, Spain, December 2016
12. Bio-seminar, Department of Electrical and Computer Engineering, Texas A&M University, October 2016
11. Topic-Contributed session, Joint Statistical Meetings, Chicago, IL, August 2016
10. Southern Regional Council on Statistics Summer Research Conference, Bentonville, AR, June 2016
9. Structured Multivariate Data Workshop, Texas A&M University, January 2016
8. Department of Statistics, Rice University, February 2015
7. Department of Statistical Science, Cornell University, February 2015
6. Department of Statistics, Indiana University, January 2015
5. Department of Statistics, Texas A&M University, January 2015
4. Department of Mathematical and Statistical Sciences, University of Colorado, Denver, January 2015
3. Department of Statistics and Actuarial Science, University of Iowa, January 2015
2. Department of Statistics, University of California, Davis, January 2015
1. Department of Biostatistics, University of Iowa, December 2014

*Contributed Presentations:*

14. Poster, R/Medicine 2021, virtual due to COVID-19, August 2021
13. Presentation, ENAR, virtual due to COVID-19, March 2021
12. Poster, ENAR, Philadelphia, PA, March 2019
11. IMS New Researchers Conference, Baltimore, MD, August 2017
10. Poster, International Conference on Machine Learning in New York City, NY, June 2016
9. Contributed session, Joint Statistical Meetings in Boston, MA, August 2014
8. Statistics Student Seminar, Cornell University, April 2014
7. Poster, SAMSI LDHD Workshop, February 2014
6. Contributed session, Joint Statistical Meetings in Montreal, Canada, August 2013
5. Poster, SAMSI LDHD Summer School, August 2013
4. Statistics Student Seminar, Cornell University, March 2013
3. Contributed session, Joint Statistical Meetings in San Diego, CA, August 2012
2. Cross-Campus Collaborative Colloquium, Cornell University, December 2011
1. Statistics Student Seminar, Cornell University, September 2011

## Teaching Experience

### Primary instructor (at Texas A&M University):

STAT 211: Principles of Statistics I **Fall 2015/2016/2017, Spring 2016**

*Calculus-based introduction to probability and probability distributions; sampling and descriptive measures; inference and hypothesis testing; analysis of variance; linear regression.*

STAT 489: Structured Research Experiences in Statistics **Spring 2022**

*Research project based on simulation studies in statistics; version control; reproducible computations; simulation study design; publication-quality figures; scientific writing.*

STAT 610: Distribution Theory **Fall 2017/2018/2019/2020/2021/2022**

*Graduate-level introduction to probability theory; distributions and expectations of random variables, transformations of random variables and order statistics; generating functions and basic limit concepts.*

STAT 689/STAT 695: Statistical Learning with Sparsity **Spring 2017/2020**

*Graduate-level class covering penalized empirical loss minimization methods with sparsity-inducing penalties. The course also includes brief introduction to convex optimization and duality.*

STAT 600: Computational Statistics **Spring 2018, Fall 2019/2020/2021/2022**

*Graduate-level course on computational statistics and optimization. Topics include version control with Git and Github, code vectorization and profiling, writing R packages, introduction to convex optimization and optimization algorithms.*

STAT 618: Statistical aspects of Machine Learning II **Spring 2023**

*Graduate-level course on statistical machine learning, a continuation of STAT 616. Topics include advanced material on statistical learning with sparsity, low-rank matrix decompositions, tensor methods, deep learning, and non-euclidean machine learning.*

### Primary instructor (at Cornell University):

ILRST 2100: Introductory Statistics **Winter 2013, 2014 ,2015**

*Non-calculus-based introduction to statistics; sampling and descriptive measures; inference and hypothesis testing; analysis of variance; linear regression.*

### Teaching Assistant (at Cornell University):

ILRST 2100: Introductory Statistics **Summer 2013, 2014**

*Non-calculus-based introduction to statistics; sampling and descriptive measures; inference and hypothesis testing; analysis of variance; linear regression.*

ENGRD 2700: Basic Engineering Probability and Statistics (recitation leader) **Fall 2013**

*Calculus-based introduction to probability and probability distributions; sampling and descriptive measures; inference and hypothesis testing; analysis of variance; linear regression.*

Table 1: Summary of teaching evaluations at Texas A&M University, Q: On the whole, this was a good instructor. Scale 1(Strongly Disagree) to 5(Strongly Agree).

| Course | Semester | Total class size | Mean (median) response |
|---|---|---|---|
| STAT 211 | Fall 2015 | 77 | 4.68 (5.00) |
| STAT 211 | Spring 2016 | 77 | 4.21 (4.00) |
| STAT 211 | Fall 2016 | 97 | 4.57 (5.00) |
| STAT 211 | Fall 2017 | 97 | 4.44 (5.00) |
| STAT 489 | Spring 2022 | 8 | 5.00 (5.00) |
| STAT 610 | Fall 2017 | 35 | 4.82 (5.00) |
| STAT 610 | Fall 2018 | 34 | 5.00 (5.00) |
| STAT 610 | Fall 2019 | 39 | 4.54 (5.00) |
| STAT 610 | Fall 2020 | 33 | 4.80 (5.00) |
| STAT 610 | Fall 2021 | 34 | 4.87 (5.00) |
| STAT 610 | Fall 2022 | 45 | 4.57 (5.00) |
| STAT 600 | Spring 2019 | 7 | 4.84 (5.00) |
| STAT 600 | Fall 2019 | 31 | 4.73 (5.00) |
| STAT 600 | Fall 2020 | 12 | 4.88 (5.00) |
| STAT 600 | Fall 2021 | 20 | 5.00 (5.00) |
| STAT 600 | Fall 2022 | 16 | 4.90 (5.00) |
| STAT 689 | Spring 2017 | 12 | 5.00 (5.00) |
| STAT 695 | Spring 2020 | 15 | 5.00 (5.00) |

MATH 4720: Statistics **Spring 2015**

*Introduction to mathematical statistics based in calculus, linear algebra, and probability theory; inference for proportions, inference for means, contingency tables and linear regression.*

BTRY 6010: Statistical Methods I (TA/Lab instructor) **Fall 2009, 2010, 2014**

*Graduate level introduction to statistical methods for analyzing data; descriptive statistics and data visualization; analysis of variance; linear regression.*

BTRY 6020: Statistical Methods II (TA/Lab instructor) **Spring 2010, 2011, 2012**

*Continuation of BTRY 6010. Emphasizes the use of multiple regression analysis, experimental design and generalized linear models.*

## Mentoring

### Postdoctoral Researchers

1. Sangyoon Yi (with Raymond Wong) **09/2020 - 08/2022**
   HDR Tripods: Texas A&M Research Institute for Interdisciplinary Foundations of Data Science
2. Hee Cheol Chung (with Yang Ni) **06/2020 - 06/2022**
   TAMU Institute of Data Science Postdoctoral Project Program
3. Grace Yoon **08/2017 - 08/2020**
   Postdoctoral Trainee of DHHS-NIH National Cancer Institute T32CA090301 (PI: R. Carroll), Gaynanova is

the Statistics Mentor

### PhD Committee Chair

1. Alexander Coulter **2026 (expected)**
2. Lei Wang **2025 (expected)**
3. Renat Sergazinov **2025 (expected)**
4. Mingze Huang (ECON) **2022**
5. Dongbang Yuan **2022**
6. Alex Lapanowski **2020**
   Position upon graduation: Senior Scientist at SABIC
7. Yunfeng Zhang **2020**
   Position upon graduation: Data and Applied Scientist at Microsoft
8. Tianying Wang (co-chair with Raymond Carroll) **2018**
   Position upon graduation: Postdoctoral Research Scientist in the Department of Biostatistics of the Mailman School of Public Health at Columbia University.

### PhD Committee Member (Statistics)

1. Carson James (chair Jesus Arroyo) **2026 (expected)**
2. Connor Brubacker (chair Scott Bruce) **2026 (expected)**
3. Jian Yan (chair Xianyang Zhang) **2024 (expected)**
4. Junsouk Choi (chair Yang Ni) **2023 (expected)**
5. Krystin Pantoja (chair David Jones) **2022**
6. Jiayi Wang (chair Raymond Wong) **2022**
7. Allyson Souris (chair Anirban Bhattacharya) **2020**
8. Sangyoon Yi (chair Xianyang Zhang) **2020**

### PhD Committee Member (Other majors)

1. Jianling Wang (chair James Caverlee, Major: Computer Science and Engineering) **2022**
2. Nida Obatake (chair Anne Shiu, Major: Mathematics) **2021**

### MS Committee Chair (Statistics)

1. Mingze Huang **2022**
2. John Schwenck **2021**
3. Rucha Bhat **2021**
4. Shaun Cass **2021**
5. Matthew Goldsmith **2021**
6. Neil Kirkpatrick **2021**

### MS Committee Member (Statistics)

1. Eric Riley **2019**

### MS Committee Member (Other majors)

1. Andrea Barton (MATH) **2023 (expected)**
2. Polina Churilova (PETE) **2023 (expected)**
3. Aaron Knodell (CPSC) **2019**
4. Haley Pichler (MATH) **2019**
5. Jung Sim Hyun (MATH) **2019**

### Undergraduate Student Research

1. Nathaniel Fernandes (ENGE) **08/2020 - 08/2021; Spring 2023**
2. Akhil Cutinha (CPSC) **Fall 2022**
3. Urjeet Shrestha (APMS) **Fall 2022**
4. Nicholas Kasman (ENGE) **Spring 2022, Fall 2022**
5. Elizabeth Chun (BMCB/STAT) **01/2020 - present**
6. Melinda Chen (STAT), joint mentoring with Jesus Arroyo **Summer 2022**
7. Wesley Halstead (STAT), joint mentoring with Jesus Arroyo **Summer 2022**
8. Sina Mokhtar (STAT) **Summer 2022**
9. Valerie Espinosa (STAT) **Summer 2022**
10. Devon Maywald (APMS) **06/2021 - 08/2022**
11. Yixin Zhang (STAT) **Summer 2021**
12. Kyle Schichl (STAT) **Summer 2021**
13. Zengxiaoran Kang (STAT) **Summer 2021**
14. Benjamin Adams (STAT) **Summer 2021**
15. Jada Lawson (STAT) **Summer 2021**
16. Mayra Hernandez (STAT) **Summer 2021**
17. Johnathan Shih (STAT) **Spring 2021**
18. Jung Hoon Seo (CPSC) **Spring 2021**
19. Marielle Hicban (BMEN) **06/2020 - 05/2021**
20. David Buchanan (STAT) **01/2020 - 05/2021**
21. Ashok Meyyappan (SPSC) **Fall 2020**
22. Nhan Nguyen (ENGE) **06/2020 - 12/2020**
23. Pratik Patel (STAT) **06/2020 - 12/2020**
24. Mary Martin (STAT) **01/2020 - 12/2020**
25. Sangaman Senthil (INEN) **Spring 2020**
26. Eric Wang (ENGE) **Spring 2020**
27. Steven Broll (STAT) **06/2019 - 08/2020**

### Other formal mentoring

1. Brittany Segundo **01/2019 - present**
   Dr. Gaynanova is a teaching mentor through the Academy for Future Faculty (AFF) at Texas A&M University

## Departmental and University Service

### At Texas A&M University:

*Department of Statistics Committees:*

- Faculty Advisory Committee **08/2022 - present**
- Promotion & Tenure Committee (Elected member) **01/2022 - present**
- SOAR subcommittees (Faculty workgroup, Research Bio workgroup) **2021**
- Graduate Committee **08/2019 - present**
- Faculty Evaluation and Promotion Guidelines Committee **2020**
- Hiring Committee **2018/2019; 2020/2021**
- Colloquium Chair **05/2018 - 12/2019**
- Undergraduate Committee **09/2017 - 08/2018**

*Panelist:*

- TAMU Workshop on NSF CAREER and other Young Investigator awards **11/2021**
- 3rd Annual TX-LA Undergraduate Mathematics conference **10/2019**
- TAMU College of Science, Lunch and Learn series **09/2019**
- TAMU Symposium for Faculty, Staff, Graduate Students and PostDocs in the Sciences **02/2017**
- TAMU AWM Chapter Panel "Career in Mathematics" **03/2016**

*Other:*

- TASTE (Take a Scientist to Lunch) College of Science Program **04/2022**
- Faculty advisor for Statistical Learning Journal Club, Department of Statistics **2019 - 2020**
- Friday Science Seminar, College of Science, Texas A&M University **02/2019**

### At Cornell University:

- President, STATS graduate student organization **11/2013 - 05/2015**
- Organiser, Statistics Student Seminars **08/2011 - 12/2013**

## Professional Activities

### Editorial service:

- Associate Editor, *Biometrika* **2023 - present**
- Associate Editor, *Journal of the American Statistical Association - Theory & Methods* **2023 - present**
- Associate Editor, *Data Science in Science* **2021 - present**
- Associate Editor, *Journal of Computational and Graphical Statistics* **2018 - 2022**

### Journal refereeing:

- Annals of Applied Statistics
- Bioinformatics
- Biometrics
- Biometrika

- Computational Statistics
- Diabetes Technology and Therapeutics
- Electronic Journal of Statistics
- Journal of the American Statistical Association
- Journal of Computational and Graphical Statistics
- Journal of Machine Learning Research
- Journal of Multivariate Analysis
- IEEE Transactions on Network Science and Engineering
- PLOS One
- R journal
- Statistical Analysis and Data Mining
- Statistical Modeling: an International Journal
- Stat
- Statistics in Biosciences
- Statistics in Medicine
- Statistics & Probability Letters
- Statistica Sinica
- Technometrics

### Conference refereeing:

- NIPS (Neural Information Processing Systems) **2020**
- AISTATS (Artificial Intelligence and Statistics) **2020**

### Book proposals refereeing:

- Springer **2018**
- CRC/Chapman & Hall **2017, 2018**
- Wiley **2017**
- MacMillan Education **2015**

### Grant review panels:

- NIH, Small Business: Computational, Modeling, and Biodata Management – MCST **2022**
- NSF **2021**
- Joint NSF/NIH panel **2016**

### Elected Positions:

- President, Southeast Texas Chapter of ASA (SETCASA) **02/2019-01/2020**
  Main activity: led, coordinated and judged SETCASA annual poster competition
- Vice-president, Southeast Texas Chapter of ASA (SETCASA) **10/2017-01/2019**
  Main activity: co-organized and judged SETCASA annual poster competition

### Professional Committees Chair:

- Chair of ASA SLDS Student Paper Award 2021 Committee **2020/2021**

- Co-chair (chair Genevera Allen) of ASA SLDS Student Paper Award 2020 Committee **2019/2020**

### Professional Committees Member:

- ASA SLDS Breiman Award 2022 Committee **2021/2022**
- SLDS conference Student Paper Award Committee **2020**
- ASA SLDS JSM 2019 Poster Competition Committee **2019**
- ASA SLDS Student Paper Award 2019 Committee **2018/2019**
- COTS (Conference of Texas Statisticians) Poster Competition Committee **2017**
- ASA SCS John M. Chambers Statistical Software Award Committee **2015/2016**

### Professional Panels:

- NISS Fall 2021 Virtual Academic Career Fair; moderator **09/2021**
- NISS Fall 2020 Virtual Academic Career Fair; presenter **12/2020**

### Conference Program Committees:

- 13th International Conference of the ERCIM WG on Computational and Methodological Statistics (CM Statistics 2020) in London, UK, Scientific Program committee **2020**
- ENAR 2019 program committee, Statistical Learning and Data Mining section representative **2019**

### Sessions Organized:

- Invited Session at CM Statistics in London, UK: "Statistical methods for time-varying multivariate data" **12/2019**
- Topic-Contributed Session at Joint Statistical Meetings: "Integrative approaches for statistical analysis of data from multiple sources" **08/2019**
- Invited Session at Joint Statistical Meetings: "Discovering homology in multi-view data: new statistical methods for data integration" **08/2018**
- Topic-Contributed Session at Joint Statistical Meetings: "Exploiting Low-Dimensional Structures: Recent Advances of Statistical Learning Methods in Genetics and Genomics" **08/2016**

### Sessions Chaired:

- Joint Statistical Meetings, virtual **08/2021**
- Joint Statistical Meetings, virtual **08/2020**
- CM Statistics, London, UK **12/2019**
- Joint Statistical Meetings, Denver, CO **07/2019**
- ENAR, Philadelphia, PA **03/2019**
- CM Statistics, Pisa, Italy **12/2018**
- Joint Statistical Meetings, Vancouver, Canada **08/2018**
- IMS Asian Pacific Rim Conference, Singapore **06/2018**

### Membership:

- American Statistical Association (ASA) **since 2011**

- Institute of Mathematical Statistics (IMS) **since 2012**
- ENAR **since 2015**

## Other:

- Docent at JSM in Boston **08/2014**